# CLAIMS

What is claimed:

1. A flash memory device, comprising:
   a. a substrate;
   b. a plurality of core stacks, wherein each core stack comprises:
      (1) a tunnel oxide layer on the substrate;
      (2) a first polysilicon layer on the tunnel oxide layer;
      (3) an anti-reflective interpoly layer on the first polysilicon layer; and
      (4) a transmissive second polysilicon layer on the anti-reflective interpoly layer;
   c. a plurality of source regions adjacent to the plurality of core stacks; and
   d. a plurality of drain regions adjacent to the plurality of core stacks.

2. The flash memory device, as recited in Claim 1, wherein the plurality of source regions and the plurality of drain regions are formed by the method comprising the steps of:
   a. depositing a layer of photoresist over the substrate and the plurality of core stacks;
   b. illuminating the layer of photoresist with a light;
   c. transmitting some of the light through the transmissive second polysilicon layer;
   d. preventing the reflection of the light at the anti-reflective interpoly layer;
   e. removing part of the photoresist layer; and
   f. implanting a dopant into the substrate.

3. The flash memory device, as recited in Claim 2, wherein the light has a wavelength $\lambda_1$, and wherein the anti-reflective interpoly layer has an index of refraction $n$ and a thickness $d$, and wherein the light has an integer number $m$ wavelengths incident upon the anti-reflective interpoly layer, and wherein

$$d \cong \frac{(m+\frac{1}{2})\lambda_1}{2n}, \quad \textit{where} \quad m=0,1,2....$$

4. The flash memory device, as recited in Claim 2, wherein the light has a wavelength $\lambda_1$, and wherein the anti-reflective interpoly layer has an index of refraction $n$, and a thickness $d$, wherein

$$d \cong \frac{\lambda_1}{4n}.$$

5. The flash memory device, as recited in Claim 4, wherein the anti-reflective interpoly layer is made of silicon oxynitride (SiON).

6. The flash memory device, as recited in Claim 5, wherein the thickness of the anti-reflective interpoly layer is between about 300 to 400 Å thick.

7. The flash memory device, as recited in Claim 2, wherein the step of depositing the layer of photoresist, deposits the photoresist onto a surface of the transmissive second polysilicon layer.

8. The flash memory device, as recited in Claim 1, wherein the anti-reflective interpoly layer is made of silicon oxynitride.

9. The flash memory device, as recited in Claim 8, wherein the thickness of the anti-reflective interpoly layer is between about 300 to 400 Å thick.

10. A method of manufacturing flash memory on a substrate, comprising the steps of: forming a plurality of core stacks on the substrate, comprising the steps of:

a. forming a tunnel oxide layer on the substrate;

b. forming a first polysilicon layer on the tunnel oxide layer;

c. forming an anti-reflective interpoly layer on the first polysilicon layer; and

d. forming a transmissive second polysilicon on the anti-reflective interpoly layer.

11. The method, as recited in Claim 10, further comprising the step of depositing a layer of photoresist over the substrate and the polysilicon layer, and wherein the photoresist reacts to a light with a wavelength $\lambda_1$, and wherein the transmissive second polysilicon transmits light with a wavelength $\lambda_1$.

12. The method, as recited in Claim 11, wherein the anti-reflective interpoly layer has an index of refraction $n$ and a thickness $d$, and wherein the light has an integer number $m$ wavelengths incident upon the anti-reflective interpoly layer, and wherein

$$d \approx \frac{(m+\frac{1}{2})\lambda_1}{2n}, \quad \textit{where} \quad m=0,1,2....$$

13. The method, as recited in Claim 11, wherein the anti-reflective interpoly layer has an index of refraction $n$ and a thickness $d$, and wherein

$$d \approx \frac{\lambda_1}{4n}.$$

14. The method as recited in Claim 13, wherein the step of forming an anti-reflective interpoly layer, forms an silicon oxynitride (SiON) layer.

15. The method as recited in Claim 14, wherein the step of forming an anti-reflective layer forms the silicon oxynitride (SiON) layer to a thickness of 300 to 400 Å.